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Section I Executive Summary

The major U.S. food exports to Ghana are rice, poultry, and wheat. Ghana is the most important commercial market for US rice in West Africa with a record sale of approximately \$49 million in CY 2005, maintaining a third of the market share for several years. The US is the leading supplier of poultry products to Ghana contributing to half the market share. In CY 2005, US poultry sale to Ghana was valued at \$9 million. US wheat exports to Ghana in CY 2005 dropped from \$22 million to \$11 million due to freight and wheat cost. US exports of HVP include fruit and vegetable juice, wine and beer reaching \$4.7 million in CY 2005. Ghana receives U.S. food aid including commodities such as wheat, soybean products and edible oil. The food aid is channeled through Private Voluntary Organizations (PVO) and is either monetized for agricultural development work or used for supplemental feeding programs.

At present, Ghana has no specific law governing agricultural biotechnology. The United Nations Environment Program and the Global Environment Facility (UNEP/GEF) provided financial and technical support towards the drafting of the Biosafety Framework for Ghana. The draft National Biosafety Framework for Ghana was completed in July 2004. The cabinet is currently reviewing a draft Biosafety Bill that establishes the National Biosafety Authority. The National Biosafety Authority will be the administrative body that is responsible for all issues related to Biotechnology in Ghana. The process has been slow and it is not clear as to when the draft Bill will be passed.

The draft Biosafety Bill stipulates that, all biotechnology products will require a permit. The regulations will govern procedures for contained work and field trials on biotechnology products; release into the environment, importation, exportation and transit of agricultural biotechnology products. Under the draft law, the current regulatory agencies will be responsible for monitoring and enforcement of biotechnology products.

Ghana ratified the Convention on Biosafety Diversity on August 29, 1994 and the Cartagena Protocol on Biosafety on May 30, 2003.

Officials at The Biotechnology and Nuclear Agricultural Research Institute (BINARI) indicated that once the bill is passed, biotech cotton would likely be one of the first products to be approved. This is due to the possibility of cross border transfer of biotechnology cotton seed from Burkina Faso which is currently testing biotechnology cotton. No contained work or field-testing of biotechnology cotton activity has been initiated yet in Ghana according to officials at BINARI.

According to GOG officials in the Ministries of MOFA, Trade and Environment, the government realizes and appreciates the benefits of modern biotechnology and the political will exists, however, a "precautionary approach" to safeguard against "undesirable consequences on human health" and the environment has been undertaken.

Ghana is hosting the Inter Ministerial Conference on Biotechnology on September 26-29, 2006 to be organized by the Ministry of Food and agriculture. GOG sources are hopeful that this conference could encourage the GOG to pass the Ghana Biosafety Bill.

Section II Biotechnology Trade and Production

Ghana does not currently produce any biotechnology crops commercially. Capacity and knowledge exist for the development and production of modern agricultural biotechnology crops according to the National Coordinator of the National Biosafety Project (NBC). The coordinator and scientists at the Biotechnology and Nuclear Agricultural Research Institute (BNARI) stated that biotechnology activity in Ghana is at the diagnostic level. Scientists are assessing genetic diversity in both food crops and industrial crops as in pests, diseases, yields and maturity periods as a prelude to modern biotechnology development. Some contained experiments are being carried out, for example, virus disease resistance in cassava, pest and disease resistance in cowpea and improvement of lysine strain in corn. Also Ghana and Cote d'Ivoire are jointly performing contained work on the Cape St Paul Virus Wilt in coconut along the border of the two countries.

According to the National Coordinator of the UNEP-GEF biosafety project, cotton would likely be one of the first products to be approved. If Burkina Faso approves varieties for use (we understand that Burkina Faso is currently testing biotech cotton) it is likely that some seed will cross the border. According to the head of the Biotechnology department at BINARI neither contained nor field-testing of biotechnology cotton has been initiated yet because the Biosafety law has not been passed.

U.S. food aid programs exist in Ghana. For the most part, the proceeds from the sale of wheat are used for agricultural development programs; for example, agro-forestry, on-farm production and storage, portable water supply and sanitation, micro enterprise development support, micro-credit programs. Direct feeding programs use soybean products, wheat and edible oil.

Section III Biotechnology Policy

i. Responsible Institutions for Implementing the Biosafety Bill

The National Biosafety Authority (NBA)
The Technical Advisory Committee (TAC)
The Regulatory Agencies
Institutional Biosafety Committees (IBC)

The NBA is the designated national authority on all issues related to modern agricultural biotechnology in Ghana. All applicants except for contained use and field trials will go through this authority. The governing body of the Authority is a Board whose chairman and members are appointed by the President for three years.

The TAC will consist of not more than eleven individuals from the regulatory agencies and from the private sector - individuals knowledgeable in science and socio-economic matters related to biotechnology. The TAC is the national advisory committee on matters concerning or related to biotechnology and carry out risk assessments of applications at the request of the Board. The Minister of Food and Agriculture appoints the members based on recommendations by the Board for a period not exceeding five years.

The Institutional Biosafety Committee reviews applications for contained use and field trials.

The regulatory agencies are responsible for monitoring and enforcement. They will also be represented on the TAC. The agencies include:

The Food and Drugs Board– Food Safety and Related Matters
Plant Protection and Regulatory Services/MOFA – Plant Health and Related Matters
Veterinary Services Department/MOFA – Animal Health and Related Matters
Environmental Protection Agency – Environmental Releases and Related Matters
Customs, Excise and Preventive Services – Border handling of biotechnology products in collaboration with agencies listed above.

ii Role and membership of the Biosafety Committee

The national focal point on Biosafety in Ghana is still yet to be decided because the Ministry of Science and Environment does not exist anymore. (The Science section is now in Ministry of Education whilst the Environment department has been moved to the Ministry of Local Government). Some GOG sources have indicated that the Ministry of Food and Agriculture (MOFA) could be a possible choice. The named Ministry would be responsible for the liaison with the Secretariat of the Convention on Biological Diversity for the administrative functions required under the Cartagena Protocol on Biosafety. The NBA will ensure adherence to the Cartagena Protocol on Biosafety through implementation of the national biosafety guidelines and other regulations.

The Ghana Biosafety Regulatory system is a coordinated framework and the Biosafety Bill establishes the National Biosafety Authority (NBA), which will be interdisciplinary in nature, to process applications relating to biotechnology substances under the Act. Additionally the bill makes provision for a governing Council, the Board, tasked with decision-making with a Technical Advisory Committee that will provide technical advice to the Board of the NBA. The establishment of the Institutional Biosafety Committee (IBC) is also provided under the Bill. The bill also provides for issuance of further guidelines to facilitate better performance of the National Biosafety Authority.

The NBA will have the powers as stated under section 39 of the Biosafety Bill to draft and adopt regulations or guidelines to ensure safety of humans and the environment; stop a project through the relevant IBC after establishing that further continuation of the project is unsafe to the personnel, community and environment; and approve deregulation of all regulated materials for free movement and commercial release on the recommendation of relevant IBCs. The bill states that a person or organization intending to introduce a biotech product into the environment or import or place a biotech product on the market must first obtain the written approval of the NBA.

Composition of the governing body of the National Biosafety Authority:

1. An expert in biotechnology and related biological sciences including biosafety, as Chairman
2. The Chairman of the Technical Advisory Committee
3. The Chief Director, or the representative of the lead Ministry on Biotech issues possibly the Ministry of Food and Agriculture.
4. One representative, Association of Ghanaian Industries (AGI)
5. One legal practitioner of not less than ten years standing
6. One representative of non governmental organizations (NGO)
7. Two other persons to be nominated by the president, one of whom should be a woman
8. The Chief Executive Officer, National Biosafety Authority

iii. Assessment of Political Factors

The Biotechnology and Nuclear Agricultural Research Institute (BNARI) of the Ghana Atomic Energy Commission (GAEC) coordinated the project to draft a Biosafety Framework for Ghana between November 2002 and July 2004. The UNEP/GEF provided financial and technical support for the project. The framework is unique to Ghana but it is modeled after the UNEP/GEF blueprint which includes – a government policy on biosafety; a regulatory regime; a system to handle requests for authorizations (including risk assessment, decision-making) and administrative functions; systems for 'follow up' (such as enforcement and monitoring for environmental effects) and systems for public awareness and participation. The text of the Framework and draft Biosafety Bill can be located at the UNEP/GEF website.

The Biosafety Framework states that there is no specific policy on biosafety in Ghana rather that the position is guided by other principles stated in the National Science and Technology Policy (2000), the Constitution (Art 36, 41) and the Ghana Poverty Reduction Strategy (GPRS). The proposed policy appears favorable to the use and acceptance of biotechnology. However, at the same time the GOG ratified the Cartagena Protocol on Biosafety in May 2003. Therefore, the "precautionary approach and the environmentally sound management of biotechnology" are also factors that were strongly considered in drafting the Framework and Biosafety Act (in draft). For example, the Act begins with stating that the first objective is "to ensure, in accordance with the precautionary principle, an adequate level of protection in the field of safe transfer, handling and use of genetically Modified Organisms (GMO) that may have an adverse effect on the environment."

Labeling

Ghana requires labeling for packaged foods and feeds. The Foods and Drugs Board (FDB) General Labeling Rules, 1992, (L. I. 1514) stipulates that food labeling be informative and accurate. Labeling of packaged and prepackaged products is for purposes of health, food safety and need to know. The minimum labeling requirements are that labeling should be clear, concise and in English; should have product name, net mass/weight, batch number and expiry date; list of ingredients and food additives must be stated. It is mandatory to label any prepackaged food item that has nutritional composition. Mandatory labeling of biotech products is not in the current draft bill.

Biosafety Protocol

Ghana ratified the Convention on Biological Diversity on August 1994 and the Convention's Cartagena Protocol on Biosafety on May 30, 2003. As stated in the National Biosafety Framework for Ghana, the Protocol is in consonance with the Ghana Constitutional obligations, Ghana environmental law and policy and the fulfillment of Ghana's treaty obligations. We are not aware of any significant impact on trade.

Section IV Marketing Issues

In Ghana, the majority of people are not aware of modern agricultural biotechnology products and the issues involved. Post discussions with representatives of some local Farmer Organizations (NGOs) in Ghana revealed that they have been involved in the process for the development of the Biosafety Framework for Ghana. Their major concerns, regarding public awareness, participation and decision-making have been included in the biosafety guideline and should be addressed during the implementation process. At the recently held ECOWAS Ministerial Conference on Biotechnology in Mali in June 21-24, 2005, two agricultural organizations, the West African Producers and Farm Network (ROPFA) and West African Network of Chambers of Agriculture (WANCA), expressed reservations about the introduction of biotechnology into the agricultural policy of West African States. (Ghanaian Times, June 28, 2005, a local newspaper). These two organizations are calling

for a five-year moratorium on biotechnology in the Africa sub-region to allow producers and farmer organizations to be well informed and participate fully in the decision-making process of the introduction of biotechnology in the region. We are not aware of any activist activity in Ghana responding to this call by the two organizations.

Information and discussions on modern biotechnology have been undertaken among GOG officials, scientists and researchers. We are not aware of any specific study assessing Ghanaians' acceptance of biotechnology products. However, we would expect that the Ghanaian producer, importer, retailer and consumer would accept biotechnology inputs if it increased production and income. Currently Ghana imports processed products from Europe and the US that may contain biotechnology ingredients. If labeling is enforced, it may affect U.S. exports to Ghana.

Ghana currently exports non-traditional food products especially pineapples, bananas and chili pepper to Europe.

Section V Capacity Building and Outreach

Ghana is clearly moving forward on biosafety. However, Ghana could benefit from capacity building outreach programs that would support science based regulatory efforts and provide accurate information to the broader public on the positive benefits of biotechnology.

USDA has funded biotechnology training over the last few years via the Borlaug and Cochran programs.

USAID has a global Program for Biosafety Systems (PBS) with West African components. The International Food Policy Research Institute (IFPRI) is the lead institution that is implementing the project. US based biotechnology research institutions are participating in the program. The purpose of the PBS is to promote the judicious use of modern agricultural biotechnology in Ghana to increase agricultural productivity with linkages to regional and global markets. The overall objectives of the PBS program include:

1) Establish an enabling environment for the testing and use of biotechnology products; 2) Strengthen skills and increase capacity for near-term conduct of field trials and food safety assessments; 3) and develop and implement a strategic plan for communication and outreach that engages diverse stakeholders and the general public.

PBS is working primarily with the Biotechnology and Nuclear Agricultural Research (BNARI) of the Ghana Atomic Energy Commission (GAEC). Other partner institutions and key stakeholders, and people to whom the message would be targeted include the Ministries of Education and Science, Local Government and Environment, Agriculture, Trade and Health, Universities, research and other public and private sector groups.

USAID funded a sensitization workshop on biotechnology/Biosafety Bill in February 2006 for parliamentarians in order to facilitate sensible and dispassionate debate as the bill is moved forward. The Biosafety bill has still not been passed as expected due to changes in Ministerial positions causing undue delays.

Section VI. Reference Material

1. National Biosafety Framework Document [ISBN: 9988-8275-4-7]
2. National Biosafety Guidelines [Part I-Introduction to biosafety Guidelines] [ISBN: 9988-8275-0-4]

3. National Biosafety Guidelines [Part II-Biosafety Guidelines for laboratory and field work] [ISBN: 9988-8274-3-1]
4. National Biosafety Guidelines [Part III-Biosafety Guidelines for movement of regulated materials and commercial releases][ISBN: 9988-8274-8-2]
5. Risk Assessment Guidelines [ISBN: 9988-8275-1-2]
6. Public Participation Guidelines [ISBN: 9988-8275-2-0]
7. Administrative Guidelines [ISBN: 9988-8275-3-9]
8. <http://www.unep.ch/biosafety/development/countryreports/GHNFrep.pdf>
9. <http://www.biodiv.org>

Note: The first two documents and highlights of the others can be found in the UNEP website given in 8 above. In addition all the documents can be assessed on the website indicated in 9 above.

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